

5430

Claims

We claim:

1. A method for remotely accessing a graphical program, the method comprising:
 - receiving information specifying a remote computer;
 - receiving information specifying a graphical program on the remote computer;
 - connecting to the remote computer, wherein said connecting comprises passing the information specifying the graphical program to the remote computer;10
 - receiving a description of a user interface associated with the graphical program;
 - displaying a user interface based on the description received.
2. The method of claim 1,
 - wherein the graphical program is executing on the remote computer during said receiving the description of the user interface associated with the graphical program.15
3. The method of claim 1, further comprising:
 - the remote computer launching execution of the graphical program after said connecting to the remote computer.
- 20 4. The method of claim 1, further comprising:
 - receiving user input to the graphical program via the displayed user interface;
 - sending the user input to the remote computer;
 - wherein the graphical program is operable to respond to the user input.
- 25 5. The method of claim 1,
 - wherein the graphical program produces a first output state;
 - wherein said displaying a user interface based on the description received comprises displaying a user interface illustrating the first output state.

6. The method of claim 5, wherein the graphical program produces a second output state after the graphical program produces the first output state, the method further comprising:

5 receiving a data update indicating the second output state;
updating the user interface based on the data update received.

7. The method of claim 1, further comprising:

10 receiving a description of a block diagram associated with the graphical program;
displaying an image of the block diagram, using the block diagram description.

8. The method of claim 7, further comprising:

15 receiving user input specifying an edit to the block diagram;
sending the user input specifying the edit to the remote computer;
wherein the remote computer is operable to edit the graphical program according
to the user input specifying the edit.

9. The method of claim 1,

20 wherein said receiving information specifying the remote computer and said
receiving information specifying the graphical program on the remote computer comprise
receiving one or more uniform resource locators (URLs).

10. The method of claim 9,

25 wherein said one or more uniform resource locators are received by a web
browser application or an application with web-browsing functionality.

11. The method of claim 10,

wherein said receiving a description of the user interface associated with the
graphical program and said displaying the user interface based on the description

received are performed by a browser plug-in coupled with the web browser application or application with web-browsing functionality.

12. A method for displaying output of a graphical program on a remote
5 computer, the method comprising:

executing the graphical program;

establishing a network connection with a first client computer;

receiving a request from the first client computer for viewing the output of a
graphical program;

10 sending a description of the graphical program output to the first client computer,
in response to receiving the request from the first client computer.

13. The method of claim 12,

wherein said executing the graphical program is performed in response to said
15 establishing the network connection with the first client computer.

14. The method of claim 12,

wherein the graphical program includes a user interface portion for displaying
output of the graphical program;

20 wherein said sending a description of the graphical program output comprises
sending a description of the user interface portion to the first client computer;

wherein the first client computer is operable to process the description of the user
interface portion in order to display a user interface illustrating the graphical program
output.

25

15. The method of claim 12, further comprising:

establishing a network connection with a second client computer;

receiving a request from the second client computer for viewing the output of the
graphical program;

sending a description of the graphical program output to the second client computer, in response to receiving the request from the second client computer.

16. The method of claim 15, further comprising:

5 sending an updated description of the graphical program output to the first client computer, in response to the graphical program producing new output information;

sending the updated description of the graphical program output to the second client computer, in response to said graphical program producing new output information.

10

17. The method of claim 15, further comprising:

receiving user input sent from the first or second client computer, wherein the user input specifies input to the graphical program;
passing the user input to the graphical program.

15

18. The method of claim 17, further comprising:

selectively allowing one of the first or second client computer to specify input to the graphical program, wherein said selectively allowing allows only one of the first or second client computer to specify input to the graphical program at a time.

20

19. A method for remotely displaying the user interface for an instrumentation application, the method comprising:

receiving information specifying a remote computer;

25 receiving information specifying a graphical program on the remote computer, wherein the graphical program is operable to implement an instrumentation application;

connecting to the remote computer, wherein said connecting comprises passing the information specifying the graphical program to the remote computer;

receiving a description of a user interface associated with the graphical program, wherein the user interface illustrates virtual instrumentation controls;

displaying a user interface based on the description received.

20. A system enabling the distributed display of a user interface for a graphical program, the system comprising:

- 5 a client computer including a CPU, memory, and a display device;
- a server computer connected to the client computer via a network, wherein the server computer includes a CPU and memory;
- 10 client software stored in the memory of the client computer;
- server software stored in the memory of the server computer;
- 15 a graphical program stored in the memory of the server computer;
- wherein the client software is operable to:
 - receive information specifying the server computer;
 - receive information specifying the graphical program stored on the server computer;
 - 20 establish a connection with the server software;
 - pass the information specifying the graphical program to the server software;
 - receive a description of a user interface associated with the graphical program from the server software;
 - 25 display a user interface on the display device, based on the description received;
 - wherein the server software is operable to:
 - establish a connection with the client software;
 - receive the information specifying the graphical program from the client software;
 - 25 execute the specified graphical program;
 - pass the description of the user interface associated with the graphical program to the client software.

21. The system of claim 20,
wherein the client software is further operable to:
receive user input via the displayed user interface;
send the user input to the server software;
5 wherein the server software is further operable to:
receive the user input from the client software;
pass the user input to the graphical program;
wherein the graphical program is operable to respond to the user input.

10 22. The system of claim 20,
wherein the graphical program produces a first output state;
wherein the description of the user interface passed to the client software includes
information indicative of the first output state;
wherein the user interface displayed on the display device illustrates the first
15 output state.

23. The system of claim 22,
wherein the graphical program produces a second output state after the graphical
program produces the first output state;
20 wherein the server software is further operable to:
send a data update to the client software, wherein the data update indicates
the second output state;
wherein the client software is further operable to:
receive the data update from the server software;
25 update the user interface displayed on the display device, based on the
data update received, wherein the user interface illustrates the second output state.

24. The system of claim 20,
wherein the server software is further operable to:

send a description of a block diagram associated with the graphical program to the client software;

wherein the client software is further operable to:

receive the description of the block diagram from the server software;

5 display an image of the block diagram on the display device, using the block diagram description.

25. The system of claim 24,

wherein the client software is further operable to:

10 receive user input specifying an edit to the block diagram;

send the user input specifying the edit to the server software;

wherein the server software is further operable to:

receive the user input specifying the edit;

15 edit the block diagram according to the user input.

26. The system of claim 20,

wherein the client software comprises a web browser or an application with web-browsing functionality.

20 27. The system of claim 26,

wherein the server software comprise a graphical programming application operable to communicate with client processes.

25 28. A memory medium comprising program instructions operable to implement a graphical program produced using a graphical programming system, the memory medium further comprising program instructions operable to:

execute the graphical program;

establish a network connection with client software;

receive a request from the client software for viewing the output of the graphical program;

send a description of the graphical program output to the client software, in response to receiving the request from the client software.

5

29. The memory medium of claim 28,
wherein said executing the graphical program is performed in response to said establishing the network connection with the client software.

10

30. The memory medium of claim 28,
wherein the graphical program includes a user interface portion for displaying output of the graphical program;
wherein said sending a description of the graphical program output comprises sending a description of the user interface portion to the client software;

15

wherein the client software is operable to process the description of the user interface portion in order to display a user interface illustrating the graphical program output.

20

31. The memory medium of claim 28, further comprising program instructions operable to:
send an updated description of the graphical program to the client software, in response to the graphical program producing new output information.

25

32. The memory medium of claim 28, further comprising program instructions operable to:
receive user input sent from the client software, wherein the user input specifies input to the graphical program;
pass the user input to the graphical program;
wherein the graphical program is operable to respond to the user input.

Add A'Add B'
Atty. Dkt. No.: 5150-38601